

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB067NM

Site Name: Gyp Hills

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on a complex landscape of hills and breaks. Slopes range from strongly sloping to steep and may be dissected. The exposed outcrops of interbedded shale, sandstone or gypsum are common. Slopes range from 10 to 45 percent. Elevation ranges from 4,200 to 5,000 feet above sea level.

Land Form:

1. Hill

2. Break

3.

Aspect:

1. N/A

2.

3.

	Minimum	Maximum
Elevation (feet)	4,200	5,000
Slope (percent)	10	45
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Medium too rapid.

CLIMATIC FEATURES

Narrative:

The climate of this area can be classified as “semi-arid continental”.

Annual average precipitation ranges from 13 to 16 inches. About seventy eight percent of the moisture usually falls during the six-month period of May through October. Most of this summer precipitation falls in the form of brief and heavy afternoon and evening thunderstorms. Hail may accompany the more severe summer storms. In the winter, there is normally only one day a month when as much as one-tenth inch of moisture falls, usually in the form of snow. Snow seldom lies on the ground for more than a few days.

Temperatures are characterized by a distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm. Maximum temperature average above 90 degrees F from July to August and an average summer includes about 80 days with high readings exceeding 90 degrees F and 10 days with readings above 100 degrees F. Temperatures usually fall rapidly after sundown and low of 60 degrees F on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in midwinter usually rise to the 50's. However, freezing temperatures normally occur at night from mid-November to mid-March.

The freeze-free season ranges from 190 to 197 days. Dates of the last freeze are April 11th to April 17th and the first freeze varies from October 20th to October 25th.

Both temperature and rainfall distribution favor warm-season, perennial plant communities in the area. However, sufficient late winter and early spring moisture allows a cool-season species to occupy a minor component within the plant community

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	164	196
Freeze-free period (days):	190	218
Mean annual precipitation (inches):	13	16

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.23	0.46	21.6	57.3
February	0.30	0.44	24.0	59.2
March	0.46	0.65	29.1	68.0
April	0.36	0.92	36.3	78.3
May	0.42	1.68	45.7	82.6
June	1.20	1.86	52.2	91.2
July	2.03	2.73	59.1	92.9
August	2.09	2.75	58.1	91.0
September	1.65	1.92	51.1	84.8
October	1.23	1.93	40.1	74.7
November	0.46	0.88	28.9	63.0
December	0.37	0.62	22.1	54.6

Climate Stations:

Station ID	Location	Period	
		From:	To:
290205	Alamogordo Dam, NM	1972	2000
293292	Fort Sumner, NM	01/01/14	2000
297254	Ramon 8SW, NM	03/04/57	122/31/01
298596	Sumner Lake, NM	01/01/21	12/31/01
299851	Yeso, NM	01/01/48	12/31/01

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
NA		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

Soils are well-drained, shallow and very shallow over gypsum. The surface texture is loam. Some gravelly or stony material may be present on the surface. Gypsum shale and sandstone outcrop is common. The available water-holding capacity is very low. Runoff is rapid and the erosion hazard is severe

Parent Material Kind: Marine Deposits

Parent Material Origin: Gypsum

Surface Texture:

1. Loam
2.
3.

Surface Texture Modifier:

1. Gravel
2. Stone
3.

Subsurface Texture Group: Gypsum

Surface Fragments ≤3" (% Cover): 15 to 35

Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments ≤3" (%Volume): 15 to 35

Subsurface Fragments ≥3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Moderately slow</u>	<u>Moderately slow</u>
Depth (inches):	<u><10</u>	<u>>72</u>
Electrical Conductivity (mmhos/cm):	<u>2.00</u>	<u>16.00</u>
Sodium Absorption Ratio:	<u>N/A</u>	<u>N/A</u>
Soil Reaction (1:1 Water):	<u>7.4</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl₂):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>0</u>	<u>3</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

This site is a grassland dominated by short and mid-grasses dotted with shrubs and an occasional juniper. Indicator plants for this site include gpy grama, gpy dropseed and coldenia which may make up 35 to 40 percent of the plant composition

Canopy Cover:

Trees	0
Shrubs and half shrubs	10 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	20
Bare ground	40
Surface gravel	10
Surface cobble and stone	0
Litter (percent)	20
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	188	319	450
Forb	38	64	90
Tree/Shrub/Vine	25	43	60
Lichen			
Moss			
Microbiotic Crusts			
Total	250	425	600

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOBR	Gyp Grama	55 – 64	55 – 64
2	SPAI	Alkali Sacaton	51 – 60	51 – 60
3	SPNE	Gyp Dropseed	47 – 55	47 – 55
4	BOER4 BOGR2 PLMU3 PLJA	Black Grama Blue Grama Tobosa Galleta	30 – 38	30 – 38
5	BOCU BOBA3 SEVU HENE5	Sideoats Grama Cane Bluestem Plains Bristlegrass New Mexico Feathergrass	13 – 21	13 – 21
6	ARIST SPCR	Threeawn spp. Sand Dropseed	9 – 17	9 – 17
7	MUPO2 MUTO2	Bush Muhly Ring Muhly	4 – 13	4 – 13

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	TIQUI	Coldenia	26 – 34	26 – 34
9	ISPL ERIOG	Rayless Goldenrod Buckwheat spp.	0 - 13	0 – 13
10	OXYTR	Locoweed spp.	0 – 4	0 – 4
11	2FA	Other Annual Forbs	9 – 17	9 – 17
12	2FP	Other Perennial Forbs	9 – 17	9 - 17

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Growth CurvesGrowth Curve ID 4016NMGrowth Curve Name: HCPCGrowth Curve Description: Grassland of short and mid-grasses and minor components of shrubs and forbs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats, which support a resident animal community that is characterized by spotted skunk, black-tailed jackrabbit, desert cottontail, white-throated woodrat, common raven, roadrunner, diamondback rattlesnake. There is seasonal use by mule deer and pronghorn antelope.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Holloman	D

Recreational Uses:

The recreation potential on this site is limited due to the fragile soils and plant community. Off-road vehicle use should be discouraged. Hunting for upland game birds is fair, and hunting for deer is poor to fair. Rock hunting for gyp crystals "Pecos Valley Diamonds" is fair to good on areas of gypsum outcrop. The natural beauty is enhanced by the break in the physiographic features from the open grassland.

Wood Products:

Limited firewood and fence posts are furnished by juniper.

Other Products:**Grazing;**

The site can be grazed at any season of the year by all classes of livestock, generally a younger age of livestock is better suited due to the slopes. This site has limited potential as a grazing resource. The site can be easily damaged by heavy grazing pressure causing loss of cover and a deterioration of the plant community to gyp grama, gyp dropseed and coldenia to completely dominate. Further deterioration generally takes place, which reduces this stand and the loss of soil causing bare gypsum surface. Livestock distribution is generally a problem on the steeper slopes of the site, and care must be taken not to overuse one area. Any grazing management should be designed to maintain an adequate plant cover to prevent soil erosion. Due to the shallow soils exposed to heavy grazing pressure, a system of deferred grazing by domestic livestock, which varies the season of grazing and rest during successive years, is needed to maintain the plant community. Approximately 70 percent of the annual yield are from species that furnish forage for livestock. This site provides good nutrition to livestock during the winter.

Other Information:**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

Similarity Index	Ac/AUM
100 - 76	6.0 – 8.1
75 – 51	6.9 – 12.5
50 – 26	8.0 – 28.0
25 – 0	28.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Plains Bristlegrass	Setaria vulpisleta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Bush Muhly	Muhlenbergia porteri	EP	P	P	P	D	D	D	D	D	D	D	P	P
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	P	P	P	P	P	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	L	D	D	D	D	D	D	P	P

Animal Kind: Livestock

Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Plains Bristlegrass	Setaria vulpisleta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Bush Muhly	Muhlenbergia porteri	EP	P	P	P	D	D	D	D	D	D	D	P	P

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Plains Bristlegrass	Setaria vulpisleta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Bush Muhly	Muhlenbergia porteri	EP	P	P	P	D	D	D	D	D	D	D	P	P
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	P	P	P	P	P	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	L	D	D	D	D	D	D	P	P

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Bush Muhly	Muhlenbergia porteri	EP	P	P	P	P	D	D	D	D	D	D	P	P
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Locoweed	Oxytropis spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Perennial Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	D	D	D	D	D	D	D	P	P

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: Chaves, De Baca, Guadalupe

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: San Miguel, Quay, Guadalupe, De Baca and Chaves.

Characteristic Soils Are:

Holloman

Other Soils included are:

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	07/26/78	Don Sylvester	07/26/78

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	12/04/02	George Chavez	2/11/03